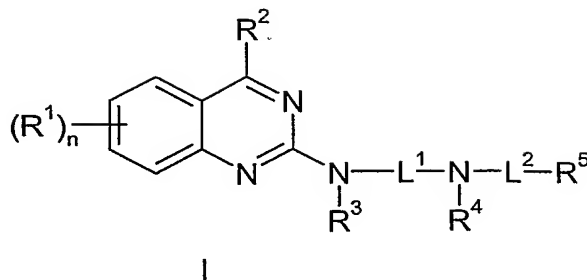


Claims

1. A compound of formula I



wherein R¹ represents a) a C₁₋₄ alkoxy group optionally substituted by one or more fluoro,

b) a C₁₋₄ alkyl group optionally substituted by one or more fluoro, c) halo, d) cyano, e) a group NR^aR^b in which R^a and R^b independently represent H or a C₁₋₄alkyl group or R^a and R^b together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring optionally including an O atom f) a group CONR^cR^d in which R^c and R^d independently represent H or a C₁₋₄alkyl group or R^c and R^d together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring, or g) a group -OSO₂C₁₋₄alkyl optionally substituted by one or more fluoro;

n represents 0, 1, 2 or 3 ;

R² represents H or cyano or a C₁₋₄alkyl group optionally substituted by one or more fluoro

or a C₁₋₄alkoxy group optionally substituted by one or more fluoro, a group NR^aR^b in which R^a and R^b independently represent H or a C₁₋₄ alkyl group or R^a and R^b together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring optionally including an O, a group CONR^cR^d in which R^c and R^d independently represent H or a C₁₋₄alkyl group or R^c and R^d together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring; R³ represents H or a C₁₋₄ alkyl group;

L¹ represents a (CH₂)_pC₃₋₁₀ cycloalkyl group in which p is 0 or 1 and in which the cycloalkyl group may be monocyclic or bicyclic and optionally may be bridged provided that the two nitrogens bearing R³ and R⁴, respectively, are not linked to the same carbon atom, and wherein one of the carbons may be replaced by O; with the proviso that L¹ does not represent 1,3-cyclopentyl or 1,4-cyclohexyl;

R^4 represents H or a C_{1-4} alkyl group optionally substituted by one or more of the following: fluoro or C_{1-4} alkoxy optionally substituted by one or more fluoro;

L^2 represents an alkylene chain $(CH_2)_s$ in which s represents 1, 2 or 3 wherein the alkylene chain is optionally substituted by one or more of the following: fluoro or C_{1-4} alkyl;

L^2 may also represent a 5-6 membered carbocyclic 5-6 membered ring fused to R^5 ;

R^5 represents phenyl or naphthyl or a heterocyclic group selected from thienyl, furyl, pyridyl, pyrrolyl, quinolinyl, indolyl, benzofuranyl, benzo[*b*]thienyl, imidazolyl, benzimidazolyl, thiazolyl, thiadiazolyl, pyrimidinyl, pyrazolyl, oxazolyl, imidazo[1,2-

a]pyridinyl, 5*H*-pyrrolo[2,3-*b*]pyrazinyl, 1*H*-pyrrolo[3,2-*c*]pyridinyl, 1*H*-pyrrolo[2,3-*c*]pyridinyl, 1*H*-pyrrolo[2,3-*b*]pyridinyl, 1*H*-indazolyl, wherein each R^5 is optionally substituted by one or more of the following: a) cyano, b) halo, c) a C_{1-4} alkyl group optionally substituted by one or more fluoro, d) a C_{1-4} alkoxy group optionally substituted by one or more fluoro, e) a group $S(O)_aR^y$ in which a is 0, 1 or 2 and R^y is phenyl

optionally substituted by cyano, halo, a C_{1-4} alkyl group optionally substituted by one or more fluoro or a C_{1-4} alkoxy group optionally substituted by one or more fluoro, f) or by a group $(CH_2)_zR^z$ in which z and w is 0 or 1 and R^z represents phenyl or a heterocyclic group selected from thienyl, pyridyl, thiazolyl, pyrazolyl, wherein each R^z is optionally substituted by one or more of the following: cyano, halo, a C_{1-4} alkyl group optionally substituted by one or more fluoro, or a C_{1-4} alkoxy group optionally substituted by one or more fluoro; as well as optical isomers and racemates thereof as well as pharmaceutically acceptable salts, thereof.

2. A compound as claimed in claim 1 in which

R^1 represents cyano or a C_{1-4} alkoxy group optionally substituted by one or more fluoro, a

C_{1-4} alkyl group optionally substituted by one or more fluoro, halo, a group NR^aR^b in which R^a and R^b independently represent H or a C_{1-4} alkyl group or R^a and R^b together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring optionally including an O, a group $CONR^cR^d$ in which R^c and R^d independently represent H or a C_{1-4} alkyl group or R^c and R^d together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring, n represents 0, 1, 2 or 3 ;

R^2 represents H or cyano or a C_{1-4} alkyl group optionally substituted by one or more fluoro or a C_{1-4} alkoxy group optionally substituted by one or more fluoro, a group NR^aR^b in which R^a and R^b independently represent H or a C_{1-4} alkyl group or R^a and R^b together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring optionally including an O, a group $CONR^cR^d$ in which R^c and R^d independently represent H or a C_{1-4} alkyl group or R^c and R^d together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring; R^3 represents H or a C_{1-4} alkyl group;

L^1 represents a $(CH_2)_pC_{5-6}$ cycloalkyl group in which p is 0 or 1 and provided that there are 3 carbon atoms between the two nitrogens bearing R^3 and R^4 , respectively, wherein one of the carbons of the cycloalkyl group may be replaced by O;

R^4 represents H or a C_{1-4} alkyl group optionally substituted by one or more of the following: fluoro or C_{1-4} alkoxy optionally substituted by fluoro;

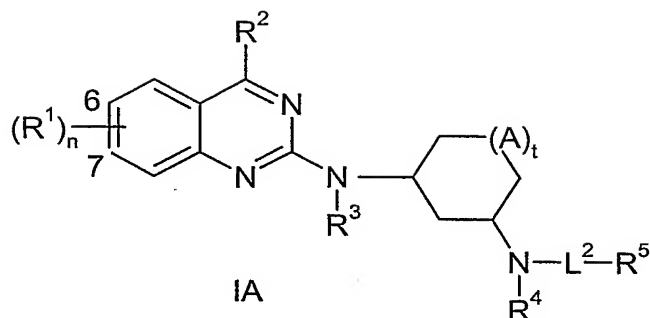
L^2 represents an alkylene chain $(CH_2)_s$ in which s represents 1, 2 or 3 wherein the alkylene chain is optionally substituted by one or more of the following: fluoro or C_{1-4} alkyl;

L^2 may also represent a 5-6 membered carbocyclic 5-6 membered ring fused to R^5 ;

R^5 represents aryl or a heterocyclic group selected from thienyl, furyl, pyridyl, pyrrolyl, quinoliny, indolyl, benzofuranyl, benzo[b]thienyl, imidazolyl, benzimidazolyl, thiazolyl, thiadiazolyl, pyrimidinyl, pyrazolyl, oxazolyl, imidazo[1,2-a]pyridine, 5H-pyrrolo[2,3-b]pyrazine, 1H-pyrrolo[3,2-c]pyridine, 1H-pyrrolo[2,3-c]pyridine, 1H-pyrrolo[2,3-b]pyridine, 1H-indazole each of which is optionally substituted by one or more of the following: cyano, halo, a C_{1-4} alkyl group optionally substituted by one or more fluoro, a C_{1-4} alkoxy group optionally substituted by one or more fluoro, or a group $(CH_2)_zR^z$ in which z is 0 or 1 and R^z represents phenyl or a heterocyclic group selected from thienyl, pyridyl, thiazolyl, pyrazolyl, wherein each R^z is optionally substituted by one or more

cyano, halo, a C_{1-4} alkyl group optionally substituted by one or more fluoro, a C_{1-4} alkoxy group optionally substituted by one or more fluoro or by a group $S(O)_aR^y$ in which a is 0, 1 or 2 and R^y is phenyl optionally substituted by cyano, halo, a C_{1-4} alkyl group optionally substituted by one or more fluoro or a C_{1-4} alkoxy group optionally substituted by one or more fluoro, as well as optical isomers and racemates thereof as well as pharmaceutically acceptable salts, thereof.

3. A compound according to claim 1 or claim 2 of formula IA



in which

R^1 represents chloro, fluoro, methoxy or a group NR^aR^b in which R^a and R^b independently represent a C_{1-4} alkyl group or R^a and R^b together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring optionally including an O; n represents 0 or 1, and when $n=1$ the substituent is attached to either position 6 or 7

R^2 represents H or cyano or a C_{1-4} alkyl group, a C_{1-4} alkoxy group optionally substituted by one or more fluoro, a group NR^aR^b in which R^a and R^b independently represent H or a C_{1-4} alkyl group or R^a and R^b together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring optionally including an O, a group $CONR^cR^d$ in which R^c and R^d independently represent H or a C_{1-4} alkyl group or R^c and R^d together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring;

m represents 0 or 1; R^3 represents H;

A represents CH_2 and t is 1;

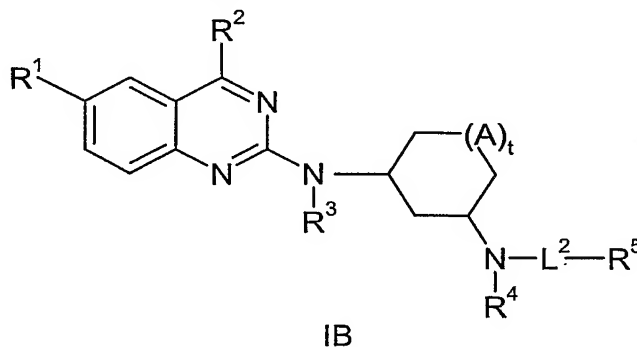
R^4 represents H;

L^2 represents CH_2 , $C(CH_3)_2$ or CF_2 ; and

R^5 represents aryl or a heterocyclic group selected from thienyl, furyl, pyridyl, pyrrolyl, quinolinyl, indolyl, benzofuranyl, benzo[*b*]thienyl, imidazolyl, benzimidazolyl, thiazolyl, thiadiazolyl, pyrimidinyl, pyrazolyl, oxazolyl, imidazo[1,2-*a*]pyridine, 5*H*-pyrrolo[2,3-*b*]pyrazine, 1*H*-pyrrolo[3,2-*c*]pyridine, 1*H*-pyrrolo[2,3-*c*]pyridine, 1*H*-pyrrolo[2,3-*b*]pyridine, 1*H*-indazole each of which is optionally substituted by one or more of the following: cyano, halo, a C_{1-4} alkyl group optionally substituted by one or more fluoro, a C_{1-4} alkoxy group optionally substituted by one or more fluoro, or by a group $S(O)_aR^y$ in which a is 0, 1 or 2 and R^y is phenyl optionally substituted by cyano, halo, a C_{1-4} alkyl group optionally substituted by one or more fluoro or a C_{1-4} alkoxy group optionally

substituted by one or more fluoro, or a group $(\text{CH}_2)_z\text{R}^z$ in which z is 0 or 1 and R^z represents phenyl or a heterocyclic group selected from thienyl, pyridyl, thiazolyl, pyrazolyl, wherein each R^z is optionally substituted by one or more cyano, halo, a C_{1-4} alkyl group optionally substituted by one or more fluoro, a C_{1-4} alkoxy group optionally substituted by one or more fluoro as well as optical isomers and racemates thereof as well as pharmaceutically acceptable salts thereof.

4. A compound according to any previous claim of formula IB

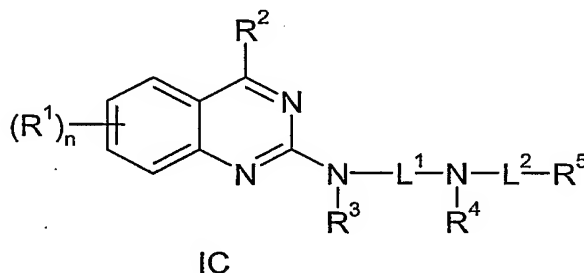


in which

- R^1 represents H, cyano, methoxy, isopropoxy, dimethylamino, chloro or fluoro;
- R^2 represents H, cyano, a C_{1-4} alkyl group optionally substituted by one or more fluoro or a C_{1-4} alkoxy group optionally substituted by one or more fluoro, a group NR^aR^b in which R^a and R^b independently represent H or a C_{1-4} alkyl group or R^a and R^b together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring optionally including an O, R^3 represents H;
- A represents CH_2 and t is 1;
- R^4 represents H;
- L^2 represents CH_2 , $\text{C}(\text{CH}_3)_2$ or CF_2 ; and
- R^5 represents aryl or a heterocyclic group selected from thienyl, furyl, pyridyl, pyrrolyl, quinolinyl, indolyl, benzofuranyl, benzo[*b*]thienyl, imidazolyl, benzimidazolyl, thiazolyl, thiadiazolyl, pyrimidinyl, pyrazolyl, oxazolyl, imidazo[1,2-*a*]pyridine, 5*H*-pyrrolo[2,3-*b*]pyrazine, 1*H*-pyrrolo[3,2-*c*]pyridine, 1*H*-pyrrolo[2,3-*c*]pyridine, 1*H*-pyrrolo[2,3-*b*]pyridine, 1*H*-indazole each of which is optionally substituted by one or more of the following: cyano, halo, a C_{1-4} alkyl group optionally substituted by one or more fluoro, a C_{1-4} alkoxy group optionally substituted by one or more fluoro, or by a group $\text{S}(\text{O})_a\text{R}^y$ in which a is 0, 1 or 2 and R^y is phenyl optionally substituted by cyano, halo, a C_{1-4} alkyl

group optionally substituted by one or more fluoro or a C₁₋₄alkoxy group optionally substituted by one or more fluoro, or a group (CH₂)_zR^z in which z is 0 or 1 and R^z represents phenyl or a heterocyclic group selected from thienyl, pyridyl, thiazolyl, pyrazolyl, wherein each R^z is optionally substituted by one or more cyano, halo, a C₁₋₄ alkyl group optionally substituted by one or more fluoro, a C₁₋₄alkoxy group optionally substituted by one or more fluoro as well as optical isomers and racemates thereof as well as pharmaceutically acceptable salts thereof.

5. A compound as claimed in claim 1 as represented by formula IC



in which R¹ represents cyano or a C₁₋₄alkoxy group optionally substituted by one or more fluoro, a C₁₋₄alkyl group optionally substituted by one or more fluoro, halo, a group NR^aR^b in which R^a and R^b independently represent H or a C₁₋₄alkyl group or R^a and R^b together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring optionally including an O, a group CONR^cR^d in which R^c and R^d independently represent H or a C₁₋₄alkyl group or R^c and R^d together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring, n represents 0, 1, 2 or 3 ;

R² represents H, cyano, a C₁₋₄alkyl group optionally substituted by one or more fluoro or a C₁₋₄alkoxy group optionally substituted by one or more fluoro, a group NR^aR^b in which R^a and R^b independently represent H or a C₁₋₄alkyl group or R^a and R^b together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring optionally including an O, a group CONR^cR^d in which R^c and R^d independently represent H or a C₁₋₄alkyl group or R^c and R^d together with the nitrogen atom to which they are attached represent a saturated 3 to 7 membered heterocyclic ring; R³ represents H or a C₁₋₄alkyl group;

L^1 represents a $(CH_2)_pC_{7-10}$ cycloalkyl group in which p is 0 or 1 and in which the cycloalkyl group is fused bicyclic or bridged bicyclic provided that the two nitrogens bearing R^3 and R^4 , respectively, are not linked to the same carbon atom, and wherein one of the carbons may be replaced by O;

L^4 represents H or a C_{1-4} alkyl group optionally substituted by one or more of the following: fluoro or C_{1-4} alkoxy, optionally substituted by one or more fluoro;

L^2 represents an alkylene chain $(CH_2)_s$ in which s represents 1, 2 or 3 wherein the alkylene chain is optionally substituted by one or more of the following: fluoro or C_{1-4} alkyl;

or L^2 may also represent a 5-6 membered carbocyclic ring fused to R^5 ;

R^5 represents aryl or a heterocyclic group selected from thienyl, furyl, pyridyl, pyrrolyl, quinolinyl, indolyl, benzofuranyl, benzo[*b*]thienyl, imidazolyl, benzimidazolyl, thiazolyl, thiadiazolyl, pyrimidinyl, pyrazolyl, oxazolyl, imidazo[1,2-*a*]pyridine, 5*H*-pyrrolo[2,3-*b*]pyrazine, 1*H*-pyrrolo[3,2-*c*]pyridine, 1*H*-pyrrolo[2,3-*c*]pyridine, 1*H*-pyrrolo[2,3-*b*]pyridine, 1*H*-indazole each of which is optionally substituted by one or more of the

following: cyano, halo, a C_{1-4} alkyl group optionally substituted by one or more fluoro, a C_{1-4} alkoxy group optionally substituted by one or more fluoro, or by a group $S(O)_aR^y$ in which a is 0, 1 or 2 and R^y is phenyl optionally substituted by cyano, halo, a C_{1-4} alkyl group optionally substituted by one or more fluoro or a C_{1-4} alkoxy group optionally

substituted by one or more fluoro, or a group $(CH_2)_zR^z$ in which z is 0 or 1 and R^z

represents phenyl or a heterocyclic group selected from thienyl, pyridyl, thiazolyl, pyrazolyl, wherein each R^z is optionally substituted by one or more cyano, halo, a C_{1-4} alkyl group optionally substituted by one or more fluoro, a C_{1-4} alkoxy group optionally substituted by one or more fluoro as well as optical isomers and racemates thereof as

well as pharmaceutically acceptable salts thereof..

6. A compound as claimed in any one of claims 1 to 4 in which p is 0 and L^1 is 1,3-cyclohexyl.

7. A compound as claimed in any one of claims 1 to 6 in which the two nitrogen atoms are in a trans orientation on the cycloalkyl ring.

8. A compound as claimed in claim 7 wherein the stereochemistry of the cycloalkyl carbon atoms to which the nitrogen atoms are attached is S, S.

9. One or more of the following compounds:

N-(4-methylquinazolin-2-yl)-*N'*-(3-thienylmethyl)-*trans*-cyclohexane-1,3-diamine;

*N*⁴,*N*⁴-dimethyl-*N*²-{-3-[(3-thienylmethyl)amino]-*trans*-cyclohexyl}quinazoline-2,4-diamine;

*N*²-{-3-[(1-benzothien-3-ylmethyl)amino]-*trans*-cyclohexyl}-*N*⁴,*N*⁴-dimethylquinazoline-2,4-diamine;

*N*⁴,*N*⁴-dimethyl-*N*²-{-3-[(1-methyl-1*H*-indol-3-yl)methyl]amino}-*trans*-cyclohexyl}quinazoline-2,4-diamine,

*N*⁴, *N*⁴-dimethyl-*N*²-((1*S*,3*S*)-3-{[2-(trifluoromethoxy)benzyl]amino}cyclohexyl)-quinazoline-2,4-diamine;

*N*⁴, *N*⁴-dimethyl-*N*²-[(1*S*,3*S*)-3-([6-(trifluoromethyl)pyridin-3-yl]methyl)amino]-cyclohexyl}quinazoline-2,4-diamine; and

*N*²-{(1*S*,3*S*)-3-[(3,4-dichlorobenzyl)amino]cyclohexyl}-*N*⁴,*N*⁴-dimethylquinazoline-2,4-diamine;

and pharmaceutically acceptable salts thereof.

10. A compound of formula I as claimed in any previous claim for use as a medicament.

11. A pharmaceutical formulation comprising a compound of formula I, as defined in any one of claims 1 to 9 and a pharmaceutically acceptable adjuvant, diluent or carrier.

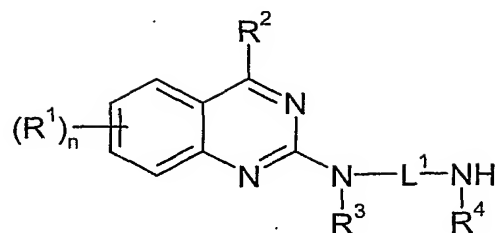
12. Use of a compound of formula I, as defined in any one of claims 1 to 9 in the preparation of a medicament for the treatment or prophylaxis of conditions associated with obesity.

13. A method of treating obesity, psychiatric disorders, anxiety, anxio-depressive disorders, depression, bipolar disorder, ADHD, cognitive disorders, memory disorders, schizophrenia, epilepsy, and related conditions, and neurological disorders and pain related disorders, comprising administering a pharmacologically effective amount of a compound as claimed in any one of claims 1 to 9 to a patient in need thereof.

14. A compound as defined in any one of claims 1 to 9 for use in the treatment of obesity.

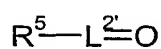
15. A process for the preparation of compounds of formula I as claimed in claim 1 comprising reacting a compound of formula II

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II

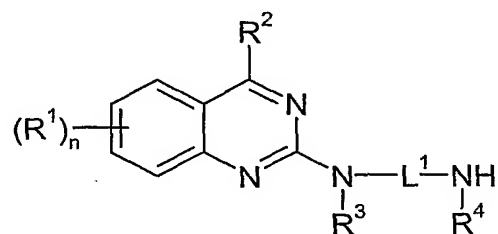
in which R^1 , R^2 , R^3 , R^4 , L^1 , n and m are as previously defined in claim 1 with a compound of formula III



III

- 5 in which R^5 is as previously defined and $L^{2'}$ represents a group which after reaction of compounds II and III gives L^2 on reduction, under reductive alkylation conditions.

16. Intermediates of formula II



II

- 10 in which R^1 , R^2 , R^3 , R^4 , L^1 , n and m are as defined in claim 1.

17. A method of treating obesity, type II diabetes, Metabolic syndrome and prevention of type II diabetes comprising administering a pharmacologically effective amount of a compound as claimed in any one of claims 1 to 9 to a patient in need thereof.